

CLAIMS

What is claimed is:

- 1 1. A system comprising:
 - 2 a transmitter in a first network node to generate a sequence of symbols, the
 - 3 sequence of symbols including preamble symbols and a data symbol; and
 - 4 a receiver in a second network node to receive the sequence of symbols generated
 - 5 by the transmitter, the receiver including a frame synchronizer logic to perform frame
 - 6 synchronization.

- 1 2. The system of claim 1, wherein a last preamble symbol in the sequence of
- 2 symbols has a different waveform than other preamble symbols in the sequence of
- 3 symbols.

- 1 3. The system of claim 1, wherein a waveform of a last preamble symbol in
- 2 the sequence of symbols is different than waveforms of other preamble symbols in the
- 3 sequence of symbols.

- 1 4. The system of claim 3, wherein the difference between the waveform of
- 2 the last preamble and the waveforms of other preamble symbols provide a way for the
- 3 frame synchronizer logic to detect the last preamble symbol.

- 1 5. The system of claim 3, wherein the last preamble symbol immediately
- 2 precedes the data symbol and the frame synchronizer logic detects the data symbol by
- 3 detecting the last preamble symbol.

- 1 6. The system of claim 3, wherein the frame synchronizer logic obtains the
- 2 data symbol by taking a Fast Fourier Transform (FFT) of the preamble symbols,
- 3 conjugating FFT coefficients, and taking an inverse FFT.

1 7. The system of claim 3, wherein the frame synchronizer logic obtains the
2 data symbol by adding a constant to each carrier phase of the preamble symbols.

1 8. A method comprising:
2 performing a Fast Fourier Transform (FFT) on received symbols;
3 subtracting phases of FFT coefficients of current symbol from phases of FFT
4 coefficients of previous symbols to produce phase differences;
5 adding phase differences to produce a sum; and
6 comparing the sum to a predetermined value.

1 9. The method of claim 8, further comprising:
2 applying a filtering in frequency domain prior to subtracting the phases of FFT
3 coefficients; and
4 recognizing a data symbol if the sum is above the predetermined value.

1 10. A method comprising:
2 generating a sequence of symbols, the sequence of symbols including preamble
3 symbols and a data symbol; and
4 receiving the sequence of symbols generated by the transmitter, the receiver
5 including a frame synchronizer logic to perform frame synchronization.

1 11. The method of claim 10, further comprising:
2 using a second waveform to represent a last preamble symbol in the sequence of
3 symbols and a first waveform to represent other preamble symbols in the sequence of
4 symbols, wherein the second waveform is substantially different than the first waveform.

1 12. The method of claim 11, further comprising:
2 detecting the last preamble symbol in the sequence of symbols by recognizing the
3 substantial difference between the second waveform and the first waveform.

1 13. The method of claim 11, further comprising placing the last preamble
2 immediately before the data symbol.

1 14. The method of claim 11, further comprising detecting the data symbol by
2 recognizing the last preamble symbol.

1 15. The method of claim 11, further comprising obtaining the data symbol by
2 adding a constant to each carrier phase of the preamble symbols.

1 16. A machine-readable medium comprising instructions which, when
2 executed by a machine, cause the machine to perform operations comprising:
3 generating a sequence of symbols, the sequence of symbols including preamble
4 symbols and a data symbol; and
5 receiving the sequence of symbols generated by the transmitter, the receiver
6 including a frame synchronizer logic to perform frame synchronization.

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